The Universal Servo Controlled Perfusion System is used for the perfusion of organs and tissues using a peristaltic pump. It is a conventional PID controller which operates to maintain either a constant perfusion pressure or a constant perfusion flow. The following additional items are required to complete the system:

- Measuring system, either for perfusion pressure or for perfusion flow
- Analog pump capable of external control and providing the appropriate pumping rate

The pressure or flow measuring system evaluates the perfusion pressure or perfusion flow (= actual value). This value is fed in to the “actual value” analog input of the SCP PLUGSYS module. The SCP has a provision for setting the required perfusion pressure or perfusion flow which represents the setpoint. From the actual value and the setpoint value, the SCP module produces a control voltage for the pump so that the required perfusion pressure or perfusion flow is produced.

Isolated intact blood vessels and nerve-muscle preparation experiments are also possible but require the use of special holders. The rigid construction and ergonomic design of the Schuler Organ Bath allows for rapid tissue mounting and adjustment to minimize tissue drying and hypoxia. Tissue bath volumes of 5, 10, 20 and 50 ml are available along with bath and tissue specific holders. Tissue supports are available for rings, strips and specialty applications, with or without platinum plate field stimulation electrodes and include an integrated oxygenating frit at the back of the holder to minimize disruption of force and displacement due to bath oxygenation. A selection of force and displacement transducers is available which are mounted to Vernier positioners.

The Schuler tissue bath system is our most advanced and feature rich tissue bath system used for the study of force or displacement from a wide variety of tissue preparations such as atria, papillary muscle (without potential recording), and skeletal and smooth muscle (intestine, bladder, uterus).